



UNIT STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

937712-718 05/19/97 MULLER, ROGER

P AGREED - 1

EXAMINER

HM12/1009

JAMES F. HALEY, JR.  
FISH & NEAVE  
1251 AVENUE OF THE AMERICAS  
NEW YORK, NY 10020

BILL P

ART UNIT	PAPER NUMBER
----------	--------------

1638

370

DATE MAILED:

10/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No.  
**08/702,718**

Applicant(s)

Muller-Rober et al.

Examiner

Phuong Bui

Art Unit

1638



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1)  Responsive to communication(s) filed on Jul 20, 2001

2a)  This action is FINAL.      2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

4)  Claim(s) 71 and 74-120 is/are pending in the application.

*131-116, 113 1/4*

4a) Of the above, claim(s) 78, 86, 87, 89, 90, 92, 93, 102, 103, 106, 107, is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 71, 74-76, 79-85, 88, 91, 94-101, 104, 105, 108, 111, 112, and 115 is/are rejected.

7)  Claim(s) 77 is/are objected to.

8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.

12)  The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.

2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

15)  Notice of References Cited (PTO-892)

18)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)

19)  Notice of Informal Patent Application (PTO-152)

17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

20)  Other: \_\_\_\_\_

Art Unit: 1638

## **DETAILED ACTION**

1. The Office acknowledges the receipt of Amendment G, Paper No. 29, filed July 20, 2001. Claims 71 and 74-120 are pending. Claims 78, 86- 87, 89-90, 92-93, 102-103, 106-107, 109-110 and 113-114 are nonelected. Claims 71, 74-77, 79-85, 88, 91, 94-101, 104-105, 108, 111-112 and 115-120 to the extent of species VI (citrate synthase of *S. tuberosum* or SEQ ID NO:1) are examined in the instant application. This action is made FINAL.

### ***Drawings***

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### ***Claim Rejections - 35 USC § 112, second paragraph***

3. Claims 84-85, 88, 91, and 94-99 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 84, line 2, a parenthetical is set forth enclosing “EC No. 4.1.3.7.” It is not clear whether or not Applicant intended this parenthetical to limit the citrate synthase of the claim. Applicant argues that this nomenclature is conventional in referring to an enzyme’s activity. However, the Office was not questioning the meaning of the nomenclature per se. Instead, the Office position is that it is not clear in the claim whether applicant intends this nomenclature to

Art Unit: 1638

be a limitation on the claimed enzyme, given the use of parentheses to set forth this nomenclature.

Clarification and/or correction are required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 71, 74-76, 79-85, 88, 91, 94-101, 104-105, 108, 111-112, 115-120 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. (Plant Molecular Biology 13: 411-418, 1989) in view of Shewmaker et al (U.S. Patent 5,107,065) for reasons of record.

Applicant traverses, stating primarily that neither Unger nor Shewmaker suggests reducing citrate synthase activity by antisense DNA or by any other mechanism to arrive at the claimed invention.

Applicant's traversal is unpersuasive for the following reasons. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is the combination of the cited prior art references which renders the claimed invention obvious. As previously stated, the gene encoding citrate synthase was known in the prior art, as taught by Unger. Shewmaker teaches

Art Unit: 1638

that production of antisense (including a minimum sequence length of 15 base pairs) to any known gene to regulate expression of that gene was within the ordinary skill in the art for inhibiting gene function. Shewmaker also teaches numerous instances where antisense constructs would be desirable, e.g., in modulating phenotypic properties of a plant, metabolic pathways and their enzymes, and inhibiting flower formation. Accordingly, to down-regulate the expression of a known gene such as the gene encoding citrate synthase for any of the reasons set forth by Shewmaker by utilizing the antisense construct as taught by Shewmaker would have been obvious at the time the invention was made. Accordingly, one skilled in the art would have been motivated to do so with a reasonable expectation of success.

***Conclusion***

6. Claim 77 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Remarks***

7. No claim is allowed.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1638

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Papers relating to this application may be submitted to Technology Sector 1 by facsimile transmission. Papers should be faxed to Crystal Mall 1, Art Unit 1638, using fax number (703) 308-4242. All Technology Sector 1 fax machines are available to receive transmissions 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30, (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Bui whose telephone number is (703) 305-1996. The Examiner can normally be reached Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Paula Hutzell, can be reached at (703) 308-4310.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

Phuong Bui  
Primary Examiner  
Art Unit 1638  
October 8, 2001

  
PHUONG T. BUI  
PRIMARY EXAMINER